

Appl. No.: 09/814,594
Amdt. dated: September 19, 2003
Reply to Office action of: April 23, 2003

REMARKS / ARGUMENTS

Please cancel claims 39-42, without prejudice.

Drawings

The Examiner objected to the drawings under 37 C.F.R. 1.83(a). 37 C.F.R. merely requires every feature claimed in the claims to be shown in the drawings.

For example, FIG. 23 illustrates a triangular shape of the footprint of the device aligned in opposing directions and aligned contacting portions 403.

For example, the support is illustrated in FIGS. 2 and 3 as support 54.

For example, the membrane is illustrated in FIG. 20 as material 254.

For example, the plurality of elongate conductors is illustrated in FIG. 12.

Accordingly, all of the claimed features are illustrated among the drawings.

Specification

The Examiner objected to the specification on page 8, line 14, as a flat support surface 70 not being shown in FIGS. 3-4.

The applicant respectfully points out that the flat support surface 70 is shown in FIG. 4 as the central flat support surface 70 (see central region of the figure).

The Examiner objected to the specification at page 19, line 32, as a depression 216 is not shown in FIGS. 16-17.

The applicant respectfully points out that the depression 216 is illustrated in FIG. 18, where the cross section is more easily presented.

The Examiner requested replacement copies of pages 26 and 27. Another copy of pages 26 and 27 are provided herewith.

Appl. No.: 09/814,594
Amdt. dated: September 19, 2003
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Section 112, first paragraph

The Examiner rejected claims 2-14, 26-35, and 39-42 under 35 U.S.C. Section 112, first paragraph, as not being described in the specification that the inventor had possession of the claimed invention, or to enable one skilled in the art to make or use the invention.

The support is illustrated in FIGS. 2 and 3 as support 54. The support 54 is not the same as the substrate 200, which is normally removed during the probe construction process.

The membrane is in overlying relationship to the support, rather than the substrate, as suggested by the Examiner.

The compliant layer may be the same as the membrane, which is inherently compliant.

The conductors may be within a signal layer.

Accordingly, the rejections under Section 112, should be overcome.

Section 112, second paragraph

The Examiner rejected claims 2-14, 26-35, and 39-42 under 35 U.S.C. Section 112, second paragraph, as not being indefinite. In particular the Examiner suggests that "a support; a membrane in overlying relationship to the support; and a plurality of conductors" lacks clear support in the specification.

The support is illustrated in FIGS. 2 and 3 as support 54.

The membrane 80a of FIG. 6 is in overlying relationship to the support.

The plurality of conductors may include the conductive traces 76a, as shown in FIG. 6.

Appl. No.: 09/814,594
Amdt. dated: September 19, 2003
Reply to Office action of: April 23, 2003

The Examiner also properly notes that the contacts are different from the conductors. For example, the contacts may be the contacts 88 shown in FIG. 6, while the conductors may be the conductive traces 76a, shown in FIG. 6.

The compliant layer may be the same as the membrane, which is inherently compliant.

The conductors may be within a signal layer.

The membrane is in overlying relationship to the support, rather than the substrate (in which the depressions are created), as suggested by the Examiner. It is noted that the support 54 is not the same as the substrate 200, which is normally removed during the probe construction process.

Littlebury et al.

The Examiner rejected claims 2-14, 26-35, and 40-42 under 35 U.S.C. Section 102(a) as being anticipated by Littlebury et al., U.S. Patent No. 5,177,438.

Littlebury et al. disclose a probing assembly that includes a support 11 (e.g., substrate), a membrane 12, a plurality of conductors 13, 14, 16, 17, supported by the membrane, and a plurality of contacts 13, 14, 16, 17 supported by the membrane. The contacts 13, 14, 16, 17 have sides that are orientated in a perpendicular direction to the membrane, while the "contact" 13 (as defined by the Examiner) has a pair of sides that are angled inwardly toward one another.

Claim 2 has been amended to patentably distinguish over Littlebury et al. by claiming that each of the contacts has at least one substantially flat surface inclined relative to a perpendicular direction relative to the membrane, defining an acute angle relative thereto. There is no suggestion, nor motivation, in Littlebury et al. to modify the orientation of the substantially flat surfaces.

Claims 3-9 depend from claim 2, and are patentable for the same reasons asserted for claim 2.

Appl. No.: 09/814,594
Amdt. dated: September 19, 2003
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Littlebury et al. construct their contact 13, 14, 16, 17 in a sequential manner using a traditional deposition techniques. The traditional deposition techniques result in interfacial layers between the layers of the contact 13, 14, 16, 17.

Claim 10 patentably distinguishes over Littlebury et al. by claiming a contact with a contacting portion and said elongate portion being integral with each other and formed free from interfacial layers.

Claims 11-14 depend from claim 10, and are patentable for the same reasons asserted for claim 10.

The probing assembly of Littlebury et al. has a stacked structure of conductive layers, with contact 17 being the layer in contact with the device while testing.

Claim 26 has been amended to patentably distinguish over Littlebury et al. by claiming that the contacts are comprised of a first type of conductive material located at the contacting portion of the contacts that comes into contact with the electrical device while probing where the depth of the first material in a direction perpendicular to the membrane at the point of contact with the electrical device while probing is greater than the depth of the first material in a direction perpendicular to the side of the first material at a position where a second type of conductive material is supporting the first material in the perpendicular direction to the side of the first material, herein the first material is constructed from a different material than the second material.

Littlebury et al. fail to disclose such a structure.

Claims 27-29 depend from claim 26, and are patentable for the same reasons asserted for claim 26.

Littlebury et al. disclose that the contacts 13, 14, 16, 17, and the conductors 13, 14, 16, 17 (as defined by the Examiner) collectively form the body extending from the contacting portion, are a set of increasingly larger stacked members with sides perpendicular and parallel to the membrane.

Appl. No.: 09/814,594
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Claim 30 patentably distinguishes over Littlebury et al. by claiming a major portion of a body extending from the contacting portion that increasingly decreases in thickness further distant from the contacting portion, wherein the decrease in thickness of the body is with a surface inclined relative to a perpendicular direction relative to the membrane, defining an acute angle relative thereto.

Claims 31-35 depend from claim 30, and are patentable for the same reasons asserted for claim 30.

Conclusion

The Examiner is respectfully requested to reconsider claims 2-14 and 26-35, and to pass the application to issue.

The applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner believes that for any reason direct contact with applicant's attorney would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the number below.

Respectfully submitted,
Chernoff Vilhauer McClung & Stenzel, LLP
1600 ODS Tower
601 SW Second Avenue
Portland, Oregon 97204

By: 

Kevin L. Russell
Reg. No. 38,292
Telephone No. (503) 227-5631
FAX No. (503) 228-4373